ATTACHMENT E – MONITORING AND REPORTING PROGRAM

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ATTACHMENT E – MONITORING AND REPORTING PROGRAM (MRP)

The Code of Federal Regulations section 122.48 requires that all NPDES permits specify monitoring and reporting requirements. Water Code Sections 13267 and 13383 also authorize the Regional Water Quality Control Board (Regional Water Board) to require technical and monitoring reports. This MRP establishes monitoring and reporting requirements, which implement the federal and state regulations.

I. GENERAL MONITORING PROVISIONS

A. Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge. All samples shall be taken at the monitoring locations specified below and, unless otherwise specified, before the monitored flow joins or is diluted by any other waste stream, body of water, or substance. Monitoring locations shall not be changed without notification to and the approval of this Regional Water Board.

B. Chemical, bacteriological, and bioassay analyses shall be conducted at a laboratory certified for such analyses by the State Department of Health Services. In the event a certified laboratory is not available to the Discharger, analyses performed by a noncertified laboratory will be accepted provided a Quality Assurance-Quality Control Program is instituted by the laboratory. A manual containing the steps followed in this program must be kept in the laboratory and shall be available for inspection by Regional Water Board staff. The Quality Assurance-Quality Control Program must conform to USEPA guidelines or to procedures approved by the Regional Water Board.

C. All analyses shall be performed in a laboratory certified to perform such analyses by the California Department of Health Services. Laboratories that perform sample analyses shall be identified in all monitoring reports.

D. Appropriate flow measurement devices and methods consistent with accepted scientific practices shall be selected and used to ensure the accuracy and reliability of measurements of the volume of monitored discharges. All monitoring instruments and devices used by the Discharger to fulfill the prescribed monitoring program shall be properly maintained and calibrated as necessary to ensure their continued accuracy. All flow measurement devices shall be calibrated at least once per year to ensure continued accuracy of the devices.

E. Monitoring results, including noncompliance, shall be reported at intervals and in a manner specified in this Monitoring and Reporting Program.

II. MONITORING LOCATIONS

The Discharger shall establish the following monitoring locations to demonstrate compliance with the effluent limitations, discharge specifications, and other requirements in this Order:

Table E-1. Monitoring Station Locations

Discharge Point Name	Monitoring Location Name	Monitoring Location Description
--	INF-001	Location where a representative sample of the facility's influent can be obtained, prior to any additives, treatment processes, and plant return flows.
001	EFF-001	Location where a representative sample of the facility's effluent can be obtained prior to discharge into the receiving water. [Latitude: 37° 56' 15"; Longitude: 121° 20' 5"]
--	EFF-002	Location where a representative sample of the facility's secondary effluent can be obtained prior to transfer to the tertiary treatment plant, which includes facultative ponds surrounded by distribution canals.
--	PND-001 - 003	Location where a representative sample of the facultative ponds' wastewater can be obtained prior to transfer to the wetlands
--	RSW-001	San Joaquin River and Bowman Road, 8.0 miles south of Discharge Point No. 001.
--	RSW-002	San Joaquin River and Highway 4, 0.5 miles south of Discharge Point No. 001.
--	RSW-002A	San Joaquin River and Burns Cutoff, 0.5 miles north of Discharge Point No. 001.
--	RSW-003	San Joaquin River at Deep Water Channel, 1.5 miles north of Discharge Point No. 001.
--	RSW-004	San Joaquin River at Light 45, 2.5 miles north of Discharge Point No. 001.
--	RSW-005	San Joaquin River at Light 41, 3.5 miles north of Discharge Point No. 001.
--	RSW-006	San Joaquin River at Light 36, 5.0 miles north of Discharge Point No. 001.
--	RSW-007	San Joaquin River at Light 24, 7.3 miles north of Discharge Point No. 001.
--	RSW-008	San Joaquin River at Light 18, 9.0 miles north of Discharge Point No. 001.
--	RGW-XX	Monitoring wells MW-1 through MW-3 and MW5 through MW-18, and any other well subsequently installed for the study required in Provision VI.C.2.c. of this Order
--	REC-001	Reclaimed water prior to use.
--	BIO-001	Biosolids prior to removal from the facility.
--	SPL-001	Location where a representative sample of the municipal supply water can be obtained. If this is impractical, water quality data provided by the water supplier(s) may be used, as long as results are flow weighted.

III. INFLUENT MONITORING REQUIREMENTS

A. Monitoring Location INF-001

1. The Discharger shall monitor influent into the facility at INF-001 as follows:

Table E-2. Influent Monitoring

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Flow	mgd	Meter	Continuous	
Carbonaceous Biochemical Oxygen Demand (CBOD) (5-day @ 20 Deg. C)	mg/L	24-hr Composite[1]	1/day	
Total Suspended Solids (TSS)	mg/L	24-hr Composite[1]	1/day	
pH	Standard Units	Meter	Continuous	
Electrical Conductivity	µmhos/cm @ 25°C	Grab	1/month	
Total Dissolved Solids		Grab	1/month	

[1] 24-hour flow proportional composite.

IV. EFFLUENT MONITORING REQUIREMENTS

A. Monitoring Location EFF-001

1. The Discharger shall monitor the Facility's effluent at EFF-001 as follows. If more than one analytical test method is listed for a given parameter, the Discharger must select from the listed methods and corresponding minimum level.

Table E-3. Effluent Monitoring

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Flow	mgd	Meter	Continuous	
Chlorine, Total Residual[1]	mg/L	Meter	Continuous	
Na_2HSO_3	mg/L	Grab	Daily	
SO_2	mg/L	Grab	Daily	
Temperature[2]	°F	Meter	Continuous	
Turbidity	NTU	Meter	Continuous	
pH	standard units	Meter	Continuous	

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Carbonaceous Biochemical Oxygen Demand (5-day @ 20 Deg. C) ($CBOD_5$)	mg/L	24-hr Composite[7]	1/day	
Total Suspended Solids (TSS)	mg/L	24-hr Composite[7]	1/day	
Total Coliform Organisms	MPN/100 mL	Grab	1/day	
Settleable Solids	mL/L	Grab	1/day	
Dissolved Oxygen	mg/L	Grab	1/day[8]	
Ammonia Nitrogen, Total (as N)[3, 4]	mg/L	24-hr Composite[7]	1/day[8]	[11]
Nitrate Nitrogen, Total (as N)[5]	mg/L	24-hr Composite[7]	1/week	
Nitrite Nitrogen, Total (as NO_3)[5]	mg/L	24-hr Composite[7]	1/week	
Total Kjeldahl Nitrogen	mg/L	24-hr Composite[7]	1/week	
Oil and Grease	mg/L	Grab	1/week	
Electrical Conductivity @ 25 Deg. C	µmhos/cm	Grab	1/week	
Total Dissolved Solids (TDS)	mg/L	Grab	1/week	
Total Organic Carbon	mg/L	24-hr Composite[7]	1/month	
Aluminum, Total Recoverable	µg/L	24-hr Composite[7]	1/month	
Cyanide, Total Recoverable[5]	µg/L	Grab	1/month	[10]
Mercury, Total	ng/L	Grab	1/month	EPA Method 1631[9]
Mercury, Methyl	ng/L	Grab	1/month	EPA Method 1630[9]
Manganese, Dissolved and Total Recoverable	µg/L	24-hr Composite[7]	1/month	
Molybdenum, Total Recoverable	µg/L	24-hr Composite[7]	1/month	
Bis-2 (ethylhexyl) phthalate[5]	µg/L	Grab	1/month	
Chlorodibromomethane[5]	µg/L	Grab	1/month	
Dichlorobromomethane[5]	µg/L	Grab	1/month	
Standard Minerals[6]	mg/L	Grab	1/year	
Hardness (as $CaCO_3$)	mg/L	Grab	1/month	
Alkalinity	mg/L	Grab	1/month	

1 Total chlorine residual must be monitored with a method sensitive to and accurate at the permitted level of 0.01 mg/L.

2 Effluent temperature monitoring shall be at the Discharge Point location.

3 Concurrent with whole effluent toxicity monitoring.

4 Report as total.

5 Priority pollutants include all 126 priority pollutants listed in the California Toxics Rule (40 CFR 131.38). For priority pollutant constituents with effluent limitations, detection limits shall be below the effluent limitations. If the lowest minimum level (ML) published in Appendix 4 of the Policy for Implementation of Toxics Standards

for Inland Surface Waters, Enclosed Bays, and Estuaries of California (State Implementation Plan or SIP) is not below the effluent limitation, the detection limit shall be the lowest ML. For priority pollutant constituents without effluent limitations, the detection limits shall be equal to or less than the lowest ML published in Appendix 4 of the SIP.

6 Standard minerals shall include the following: boron, calcium, iron, magnesium, potassium, sodium, chloride, manganese, phosphorus, total alkalinity (including alkalinity series), and hardness, and include verification that the analysis is complete (i.e., cation/anion balance).

7 24-hour flow proportioned composite.

8 Daily from 1 September through 1 March, twice weekly remainder of the year.

9 Unfiltered methylmercury and total mercury samples shall be taken using clean hands/dirty hands procedures, as described in U.S. EPA method 1669: *Sampling Ambient Water for Trace Metals at EPA Water Quality Criteria Levels,* for collection of equipment blanks (section 9.4.4.2), and shall be analyzed by U.S. EPA method 1630/1631 (Revision E) with a method detection limit of 0.02 ng/l for methylmercury and 0.2 ng/l for total mercury.

10 As specified in 40 CFR Part 136; or samples taken at the effluent without preservatives, may be analyzed for cyanide within 15 minutes from collection and must be performed by a laboratory certified for such analyses by the State Department of Public Health.

11 The reporting limit shall be at or below 0.5 mg/L.

12 Calculated measurements may be used.

V. WHOLE EFFLUENT TOXICITY TESTING REQUIREMENTS

A. **Acute Toxicity Testing.** The Discharger shall conduct acute toxicity testing to determine whether the effluent is contributing acute toxicity to the receiving water. The Discharger shall meet the following acute toxicity testing requirements:

1. *Monitoring Frequency* – The Discharger shall perform weekly acute toxicity testing, concurrent with effluent ammonia sampling.

2. *Sample Types* – For static non-renewal and static renewal testing, the samples shall be flow proportional 24-hour composites and shall be representative of the volume and quality of the discharge. The effluent samples shall be taken at the effluent monitoring location EFF-001.

3. *Test Species* – Test species shall be rainbow trout (*Oncorhynchus mykiss*).

4. *Methods* – The acute toxicity testing samples shall be analyzed using EPA-821-R-02-012, Fifth Edition and its subsequent amendments or revisions. Temperature, total residual chlorine, and pH shall be recorded at the time of sample collection. No pH adjustment may be made unless approved by the Executive Officer.

5. *Test Failure* – If an acute toxicity test does not meet all test acceptability criteria, as specified in the test method, the Discharger must re-sample and re-test as soon as possible, not to exceed 7 days following notification of test failure.

B. **Chronic Toxicity Testing**. The Discharger shall conduct three species chronic toxicity testing to determine whether the effluent is contributing chronic toxicity to the receiving water. The Discharger shall meet the following chronic toxicity testing requirements:

1. *Monitoring Frequency* –The Discharger shall perform quarterly three species chronic toxicity testing.

2. *Sample Types* – Effluent samples shall be flow proportional 24-hour composites and shall be representative of the volume and quality of the discharge. The effluent samples shall be taken at EFF-001. The receiving water control shall be a grab sample obtained from the RSW-001 sampling location.

3. *Sample Volumes* – Adequate sample volumes shall be collected to provide renewal water to complete the test in the event that the discharge is intermittent.

4. *Test Species* – Chronic toxicity testing measures sublethal (e.g., reduced growth, reproduction) and/or lethal effects to test organisms exposed to an effluent compared to that of the control organisms. The Discharger shall conduct chronic toxicity tests with:

   - The cladoceran, water flea, *Ceriodaphnia dubia* (survival and reproduction test);
   - The fathead minnow, *Pimephales promelas* (larval survival and growth test); and
   - The green alga, *Selenastrum capricornutum* (growth test).

5. *Methods* – The presence of chronic toxicity shall be estimated as specified in *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, Fourth Edition,* EPA/821-R-02-013, October 2002 and its subsequent amendments or revisions.

6. *Reference Toxicant* – As required by the SIP, all chronic toxicity tests shall be conducted with concurrent testing with a reference toxicant and shall be reported with the chronic toxicity test results.

7. *Dilutions* – The chronic toxicity testing shall be performed using the dilution series identified in Table E-4, below. The receiving water control shall be used as the diluent (except for *Selenastrum capricornutum* testing), unless initial tests results indicate that the receiving water is toxic. For *Selenastrum capricornutum* testing, laboratory control water may be used as the diluent.

   If the receiving water is toxic, laboratory control water may be used as the diluent, in which case, the receiving water should still be sampled and tested to provide evidence of its toxicity.

8. *Test Failure* –The Discharger must re-sample and re-test as soon as possible, but no later than fourteen (14) days after receiving notification of a test failure. A test failure is defined as follows:

   a. The reference toxicant test or the effluent test does not meet all test acceptability criteria as specified in the *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, Fourth Edition,*

EPA/821-R-02-013, October 2002 (Method Manual), and its subsequent amendments or revisions; or

b. The percent minimum significant difference (PMSD) measured for the test exceeds the upper PMSD bound variability criterion in Table 6 on page 52 of the Method Manual. (A retest is only required in this case if the test results do not exceed the monitoring trigger specified in Special Provisions VI.C.2.a.iii.)

Table E-4. Chronic Toxicity Testing Dilution Series

Sample	Dilutions (%)					Controls	
	100	50	25	12.5	6.25	Receiving Water	Laboratory Water
% Effluent	100	50	25	12.5	6.25	0	0
% Receiving Water[1]	0	50	75	87.5	93.75	100	0
% Laboratory Water	0	0	0	0	0	0	100

1. If receiving water is toxic, laboratory water may be used as the diluent as described in EPA method 821-R-02-013 Section 7.12.

C. **WET Testing Notification Requirements.** The Discharger shall notify the Regional Water Board within 24-hrs after the receipt of test results exceeding the monitoring trigger during regular or accelerated monitoring, or an exceedance of the acute toxicity effluent limitation.

D. **WET Testing Reporting Requirements.** All toxicity test reports shall include the contracting laboratory's complete report provided to the Discharger and shall be in accordance with the appropriate "Report Preparation and Test Review" sections of the method manuals. At a minimum, whole effluent toxicity monitoring shall be reported as follows:

1. **Chronic WET Reporting.** Regular chronic toxicity monitoring results shall be reported to the Regional Water Board within 30 days following completion of the test, and shall contain, at minimum:

   b. The results expressed in TUc, measured as 100/NOEC, and also measured as $100/LC_{50}$, $100/EC_{25}$, $100/IC_{25}$, and $100/IC_{50}$, as appropriate;

   c. The statistical methods used to calculate endpoints;

   d. The statistical output page, which includes the calculation of the percent minimum significant difference (PMSD);

   e. The dates of sample collection and initiation of each toxicity test; and

   f. The results compared to the numeric toxicity monitoring trigger.

   Additionally, the monthly discharger self-monitoring reports shall contain an updated chronology of chronic toxicity test results expressed in TUc, and organized by test species, type of test (survival, growth or reproduction), and monitoring frequency, i.e., either quarterly, monthly, accelerated, or TRE.

2. **Acute WET Reporting.** Acute toxicity test results shall be submitted with the monthly discharger self-monitoring reports and reported as percent survival.

3. **TRE Reporting.** Reports for Toxicity Reduction Evaluations shall be submitted in accordance with the schedule contained in the Discharger's approved TRE Work Plan.

4. **Quality Assurance (QA).** The Discharger must provide the following information for QA purposes:

   a. Results of the applicable reference toxicant data with the statistical output page giving the species, NOEC, LOEC, type of toxicant, dilution water used, concentrations used, PMSD, and dates tested.

   b. The reference toxicant control charts for each endpoint, which include summaries of reference toxicant tests performed by the contracting laboratory.

   c. Any information on deviations or problems encountered and how they were dealt with.

VI. LAND DISCHARGE MONITORING REQUIREMENTS – NOT APPLICABLE

VII. RECLAMATION MONITORING REQUIREMENTS

A. Monitoring Location REC-001

1. The Discharger shall monitor reclaimed water at REC-001 as follows:

Table E-5. Reclamation Monitoring Requirements

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Volume Used	mgd	Estimated	1/day	--
Total Coliform Organisms	MPN/100ml	Grab	2/week	

VIII. RECEIVING WATER MONITORING REQUIREMENTS – SURFACE WATER AND GROUNDWATER

A. Monitoring Location RSW-001 through RSW-008

1. The Discharger shall monitor the San Joaquin River at Monitoring Locations RSW-001 through RSW-008 as follows:

Table E-6. Receiving Water Monitoring Requirements[8]

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
River Flow	cubic feet/sec	Meter	15-minute intervals	[1]
Dissolved Oxygen	mg/L	Grab	1/week (or 1/month)[2]	
pH[3]	Standard Units	Grab	1/week (or 1/month)[2]	

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Temperature[3]	°F (°C)	Grab	1/week (or 1/month)[2]	
Turbidity	NTUs	Grab	1/week (or 1/month)[2]	
Electrical Conductivity @ 25 Deg. C	µmhos/cm	Grab	1/week (or 1/month)[2]	
Total Dissolved Solids	mg/L	Grab	1/week (or 1/month)[2]	
Fecal Coliform Organisms	MPN/100 mL	Grab	1/week (or 1/month)[2]	
Volatile Suspended Solids	mg/L	Grab	1/week (or 1/month)[2]	
Total Suspended Solids	mg/L	Grab	1/week (or 1/month)[2]	
$CBOD_5$	mg/L	Grab	1/week (or 1/month)[2]	
Total Kjeldahl Nitrogen	mg/L	Grab	1/week (or 1/month)[2]	
Nitrate Nitrogen, Total (as N)	mg/L	Grab	1/week (or 1/month)[2]	
Nitrite Nitrogen, Total (as NO_3)	mg/L	Grab	1/week (or 1/month)[2]	
Ammonia Nitrogen, Total (as N)[3]	mg/L	Grab	1/week (or 1/month)[2,5]	[7]
	mg/L	Grab	Weekly[6]	[7]
Chlorophyll	mg/L	Grab	1/week (or 1/month)[2]	
Pheophytin	mg/L	Grab	1/week (or 1/month)[2]	
Hardness (as $CaCO_3$)	mg/L	Grab	1/month	
Alkalinity	mg/L	Grab	1/month	
Trihalomethanes[4]	µg/L	Grab	1/quarter	

1 Flow information reported to the Discharger by the USGS, collected from the flow monitoring station located approximately 500 feet south of the outfall. Flow will continue to be recorded in 15-minute intervals and reported to the Regional Water Board within self-monitoring report as a daily net flow value.

2 During the portion of the year from 1 May through 30 November or when dissolved oxygen levels are less than 5 mg/L, Stations RSW-001 through RSW-008 shall be sampled weekly at low slack tide, when practical (between 8:00 and 11:00 am). From 1 December through 30 April, sampling frequency shall be monthly.

3 Temperature and pH shall be collected at the time of ammonia monitoring to allow for determination of ammonia toxicity.

4 Trihalomethanes include bromoform, chloroform, dichlorobromomethane, and chlorodibromomethane. Concentrations of each constituent shall be separately monitored and reported.

5 Monitoring locations RSW-005 through RSW-008

6 Monitoring locations RSW-001 through RSW-004

The method detection limit shall be at or below 0.1 mg/L.

In the event that unsafe conditions exist (e.g. high flows in San Joaquin River) on scheduled sampling days, sampling shall be rescheduled. Should unsafe conditions prohibit the collection of samples at the frequency defined in this table, this shall be noted in the self monitoring report and sampling shall resume at the frequency defined in this table as soon as conditions allow.

B. Visual Observations RSW-002, RSW-002A, and RSW-003

1. In conducting the weekly receiving water sampling, a log shall be kept of the receiving water conditions throughout the reach bounded by RSW-002, RSW-002A,

and RSW-003. A description, including at the minimum, the presence or absence of the following shall be recorded and summarized in the monthly self-monitoring reports.

a. Floating or suspended matter;
b. Discoloration;
c. Bottom deposits;
d. Aquatic life;
e. Visible films, sheens, or coatings;
f. Fungi, slimes, or objectionable growths; and
g. Potential nuisance conditions.

C. Groundwater Monitoring

1. The Discharger shall continue the groundwater monitoring program established under Order No. R5-2002-0083 (consisting of groundwater monitoring wells MW-1, MW-2, MW-3, and MW-5 through MW-18). Groundwater monitoring of MW-1, MW-2, MW-3, and MW-5 through MW-18 shall include, at a minimum, the following:

Table E-7. Groundwater Monitoring Requirements

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Groundwater elevation	feet	Grab	1/quarter or 2/year[1]	
Total Dissolved Solids	mg/L	Grab	1/quarter or 2/year[1]	
Ammonia, Total (as N)	mg/L	Grab	1/quarter or 2/year[1]	
Nitrate (as N)	mg/L	Grab	1/quarter or 2/year[1]	
Nitrite (as N)	mg/L	Grab	1/quarter or 2/year[1]	
Total Kjeldahl nitrogen	mg/L	Grab	1/quarter or 2/year[1]	
pH	standard units	Grab	1/quarter or 2/year[1]	
Electrical Conductivity @ 25 Deg. C	µmhos/cm	Grab	1/quarter or 2/year[1]	
Fecal Coliform Organisms	MPN/100mL	Grab	1/quarter or 2/year[1]	
Boron	mg/L	Grab	1/quarter or 2/year[1]	
Chloride	mg/L	Grab	1/quarter or 2/year[1]	
Dissolved Iron	mg/L	Grab	1/quarter or 2/year[1]	
Dissolved Manganese	mg/L	Grab	1/quarter or 2/year[1]	
Sodium	mg/L	Grab	1/quarter or 2/year[1]	

[1] MW-1, MW-2, MW-10, MW-12, MW-13, MW-15, and MW-17 shall be monitored quarterly; all other wells shall be monitored twice per year.

IX. OTHER MONITORING REQUIREMENTS

A. Biosolids

1. Monitoring Location BIO-001

a. A composite sample of sludge shall be collected annually at Monitoring Location BIO-001 in accordance with USEPA's POTW Sludge Sampling and Analysis Guidance Document, August 1989, and tested for priority pollutants listed in 40 CFR section 122 Appendix D, Tables II and III (excluding total phenols).

b. A composite sample of sludge shall be collected when sludge is removed from the facility for disposal in accordance with USEPA's POTW Sludge Sampling and Analysis Guidance Document, August 1989, and tested for the metals listed in Title 22.

c. Sampling records shall be retained for a minimum of **5 years**. A log shall be kept of sludge quantities generated and of handling and disposal activities. The frequency of entries is discretionary; however, the log should be complete enough to serve as a basis for part of the annual report.

d. The Discharger shall monitor twice per year and submit characterization of the sludge quality, including sludge percent solids and quantitative results of chemical analysis for the priority pollutants listed in 40 CFR 122 Appendix D, Tables II and III (excluding total phenols). Suggested methods for analysis of sludge are provided in USEPA publications titled "Test Methods for Evaluating Solid Waste: Physical/Chemical Methods" and "Test Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater". Recommended analytical holding times for sludge samples should reflect those specified in 40 CFR 136.6.3(e). Other guidance is available in USEPA's POTW Sludge Sampling and Analysis Guidance Document, August 1989.

B. Municipal Water Supply

1. Monitoring Location SPL-001

The Discharger shall monitor the Municipal Water Supply at SPL-001 as follows. A sampling station shall be established where a representative sample of the municipal water supply can be obtained. Municipal water supply samples shall be collected at approximately the same time as effluent samples.

Table E-8. Municipal Water Supply Monitoring Requirements

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Total Dissolved Solids[1]	mg/L	Grab	1/quarter	
Electrical Conductivity @ 25 Deg. C[1]	µmhos/cm	Grab	1/quarter	
Standard Minerals[2]	mg/L	Grab	1/year	

1. If the water supply is from more than one source, the total dissolved solids and electrical conductivity shall be reported as a weighted average and include copies of supporting calculations.
2. Standard minerals shall include all major cations and anions and include verification that the analysis is complete (i.e., cation/anion balance).

C. Secondary Effluent – Monitoring Location EFF-002

1. The Discharger shall monitor the Facility's secondary effluent at EFF-002 as required in Table E-10.

Table E-9. Secondary Effluent Monitoring Requirements

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Total Dissolved Solids	mg/L	Grab	1/week	
Ammonia (as N)	mg/L	Grab	1/month	
Nitrate (as N)	mg/L	Grab	1/month	
Nitrite (as N)	mg/L	Grab	1/month	
Total Kjeldahl Nitrogen	mg/L	Grab	1/month	
pH	standard units	Grab	1/week	
Electrical Conductivity @ 25 Deg. C	µmhos/cm	Grab	1/week	
Fecal Coliform Organisms	MPN/100mL	Grab	1/month	
Boron	mg/L	Grab	1/month	
Chloride	mg/L	Grab	1/month	
Dissolved Iron	mg/L	Grab	1/month	
Dissolved Manganese	mg/L	Grab	1/month	
Sodium	mg/L	Grab	1/month	

D. Wastewater in Facultative Ponds - Monitoring Locations PND-001 through PND-003.

1. At a minimum, the Discharger shall monitor wastewater impounded in each Facility pond(s) at PND-001 through PND-003 as required in Table E-11, below. Grab samples shall be collected from each pond during the specified sampling frequency and combined to create one composite sample.

Table E-10. Pond(s) Monitoring Requirements

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Dissolved Oxygen[1]	mg/L	Grab	1/week	
pH	Standard Units	Grab	1/week	
Freeboard	feet	--	1/week	
Available Storage Volume	Acre-feet	--	1/month	
BOD 5-day @ 20°C	mg/L	Grab	1/week	
Total Dissolved Solids	mg/L	Grab	1/week	
Electrical Conductivity	umhos/cm	Grab	1/week	
Ammonia (as N)	mg/L	Grab	1/month	
Nitrate (as N)	mg/L	Grab	1/month	
Nitrite (as N)	mg/L	Grab	1/month	

Total Kjeldahl Nitrogen	mg/L	Grab	1/month	
Fecal Coliform Organisms	MPN/100mL	Grab	1/month	
Boron	mg/L	Grab	1/month	
Chloride	mg/L	Grab	1/month	
Dissolved Iron	mg/L	Grab	1/month	
Dissolved Manganese	mg/L	Grab	1/month	
Sodium	mg/L	Grab	1/month	

1. Samples shall be collected at a depth of one foot from each pond in use, opposite the inlet. Samples shall be collected between 0700 and 0900 hours.

X. REPORTING REQUIREMENTS

A. General Monitoring and Reporting Requirements

1. The Discharger shall comply with all Standard Provisions (Attachment D) related to monitoring, reporting, and recordkeeping.

2. Upon written request of the Regional Water Board, the Discharger shall submit a summary monitoring report. The report shall contain both tabular and graphical summaries of the monitoring data obtained during the previous year(s).

3. **Compliance Time Schedules.** For compliance time schedules included in the Order, the Discharger shall submit to the Regional Water Board, on or before each compliance due date, the specified document or a written report detailing compliance or noncompliance with the specific date and task. If noncompliance is reported, the Discharger shall state the reasons for noncompliance and include an estimate of the date when the Discharger will be in compliance. The Discharger shall notify the Regional Water Board by letter when it returns to compliance with the compliance time schedule.

4. The Discharger shall report to the Regional Water Board any toxic chemical release data it reports to the State Emergency Response Commission within 15 days of reporting the data to the Commission pursuant to section 313 of the "Emergency Planning and Community Right to Know Act" of 1986.

5. **Reporting Protocols.** The Discharger shall report with each sample result the applicable Reporting Level (RL) and the current Method Detection Limit (MDL), as determined by the procedure in Part 136.

   The Discharger shall report the results of analytical determinations for the presence of chemical constituents in a sample using the following reporting protocols:

   a. Sample results greater than or equal to the RL shall be reported as measured by the laboratory (i.e., the measured chemical concentration in the sample).

   b. Sample results less than the RL, but greater than or equal to the laboratory's MDL, shall be reported as "Detected, but Not Quantified," or DNQ. The estimated chemical concentration of the sample shall also be reported.

For the purposes of data collection, the laboratory shall write the estimated chemical concentration next to DNQ as well as the words "Estimated Concentration" (may be shortened to "Est. Conc."). The laboratory may, if such information is available, include numerical estimates of the data quality for the reported result. Numerical estimates of data quality may be percent accuracy (± a percentage of the reported value), numerical ranges (low to high), or any other means considered appropriate by the laboratory.

c. Sample results less than the laboratory's MDL shall be reported as "Not Detected," or ND.

d. Dischargers are to instruct laboratories to establish calibration standards so that the Minimum Level (ML) value (or its equivalent if there is differential treatment of samples relative to calibration standards) is the lowest calibration standard. At no time is the Discharger to use analytical data derived from *extrapolation* beyond the lowest point of the calibration curve.

6. **Multiple Sample Data.** When determining compliance with an AMEL, AWEL, or MDEL for priority pollutants and more than one sample result is available, the Discharger shall compute the arithmetic mean unless the data set contains one or more reported determinations of "Detected, but Not Quantified" (DNQ) or "Not Detected" (ND). In those cases, the Discharger shall compute the median in place of the arithmetic mean in accordance with the following procedure:

   a. The data set shall be ranked from low to high, ranking the reported ND determinations lowest, DNQ determinations next, followed by quantified values (if any). The order of the individual ND or DNQ determinations is unimportant.

   b. The median value of the data set shall be determined. If the data set has an odd number of data points, then the median is the middle value. If the data set has an even number of data points, then the median is the average of the two values around the middle unless one or both of the points are ND or DNQ, in which case the median value shall be the lower of the two data points where DNQ is lower than a value and ND is lower than DNQ.

B. Self Monitoring Reports (SMRs)

1. At any time during the term of this permit, the State or Regional Water Board may notify the Discharger to electronically submit Self-Monitoring Reports (SMRs) using the State Water Board's California Integrated Water Quality System (CIWQS) Program Web site (http://www.waterboards.ca.gov/ciwqs/index.html). Until such notification is given, the Discharger shall submit hard copy SMRs. The CIWQS Web site will provide additional directions for SMR submittal in the event there will be service interruption for electronic submittal.

2. Monitoring results shall be submitted to the Regional Water Board by the **first day** of the second month following sample collection. Quarterly and annual monitoring results shall be submitted by the **first day of the second month following each calendar quarter, semi-annual period, and year**, respectively.

3. In reporting the monitoring data, the Discharger shall arrange the data in tabular form so that the date, the constituents, and the concentrations are readily discernible. The data shall be summarized in such a manner to illustrate clearly whether the discharge complies with waste discharge requirements. The highest daily maximum for the month, monthly and weekly averages, and medians, and removal efficiencies (%) for BOD and Total Suspended Solids, shall be determined and recorded as needed to demonstrate compliance.

4. With the exception of flow, all constituents monitored on a continuous basis (metered), shall be reported as daily maximums, daily minimums, and daily averages; flow shall be reported as the total volume discharged per day for each day of discharge.

5. If the Discharger monitors any pollutant at the locations designated herein more frequently than is required by this Order, the results of such monitoring shall be included in the calculation and reporting of the values required in the discharge monitoring report form. Such increased frequency shall be indicated on the discharge monitoring report form.

6. A letter transmitting the self-monitoring reports shall accompany each report. Such a letter shall include a discussion of requirement violations found during the reporting period, and actions taken or planned for correcting noted violations, such as operation or facility modifications. If the Discharger has previously submitted a report describing corrective actions and/or a time schedule for implementing the corrective actions, reference to the previous correspondence will be satisfactory. The transmittal letter shall contain the penalty of perjury statement by the Discharger, or the Discharger's authorized agent, as described in the Standard Provisions.

7. SMRs must be submitted to the Regional Water Board, signed and certified as required by the Standard Provisions (Attachment D), to the address listed below:

   Regional Water Quality Control Board
   Central Valley Region
   11020 Sun Center Dr., Suite #200
   Rancho Cordova, CA 95670-6114

8. Monitoring periods and reporting for all required monitoring shall be completed according to the following schedule:

Table E-11. Monitoring Periods and Reporting Schedule

Sampling Frequency	Monitoring Period Begins On...	Monitoring Period	SMR Due Date
Continuous	**First day of calendar month following effective date of this Order**	All	Submit with monthly SMR
1/day	**First day of calendar month following effective date of this Order**	(Midnight through 11:59 PM) or any 24-hour period that reasonably represents a calendar day for purposes of sampling.	Submit with monthly SMR
1/week	**First Sunday following first day of calendar month following permit effective date**	Sunday through Saturday	Submit with monthly SMR
1/month	First day of calendar month following permit effective date	First day of calendar month through last day of calendar month	First day of second calendar month following month of sampling
1/quarter	Closest of 1January, 1 April, 1 July, or 1 October following permit effective date	1 January through 31 March 1 April through 30 June 1 July through 30 September 1 October through 31 December	May 1 of the same year August 1 of the same year November 1 of the same year February 1 of the next year
2/year	Closest of 1 January or 1 July following permit effective date	1 January through 30 June 1 July through 31 December	August 1 of the same year February 1 of the next year
1/year	1 January following permit effective date	1 January through 31 December	February 1 of the next year

C. Discharge Monitoring Reports (DMRs)

1. As described in Section X.B.1 above, at any time during the term of this permit, the State or Regional Water Board may notify the Discharger to electronically submit SMRs that will satisfy federal requirements for submittal of Discharge Monitoring Reports (DMRs). Until such notification is given, the Discharger shall submit DMRs in accordance with the requirements described below.

2. DMRs must be signed and certified as required by the standard provisions (Attachment D). The Discharger shall submit the original DMR and one copy of the DMR to the address listed below:

Standard Mail	FedEx/UPS/ Other Private Carriers
State Water Resources Control Board Division of Water Quality c/o DMR Processing Center PO Box 100 Sacramento, CA 95812-1000	State Water Resources Control Board Division of Water Quality c/o DMR Processing Center 1001 I Street, 15th Floor Sacramento, CA 95814

3. All discharge monitoring results must be reported on the official USEPA pre-printed DMR forms (EPA Form 3320-1). Forms that are self-generated cannot be accepted unless they follow the exact same format as EPA form 3320-1.

D. Other Reports

1. **Progress Reports.** As specified in Special Provisions VI.C.3.b, progress reports shall be submitted in accordance with the following reporting requirements. At minimum, the progress reports shall include a discussion of the status in the reduction of salinity, whether the Discharger is on taskto meet the salinity goal, and the remaining tasks to meet the salinity goal.

Table E-12. Reporting Requirements for Special Provisions Progress Reports

Special Provision	Reporting Requirements
Annual Progress Reports for Salinity Reduction Goal (Provision VI.C.3.b)	**1 December**, annually

2. Within **60 days** of permit adoption, the Discharger shall submit a report outlining minimum levels, method detection limits, and analytical methods for approval, with a goal to achieve detection levels below applicable water quality criteria. At a minimum, the Discharger shall comply with the monitoring requirements for CTR constituents as outlined in Section 2.3 and 2.4 of the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California*, adopted 2 March 2000 by the State Water Resources Control Board. All peaks identified by analytical methods shall be reported.

3. The Discharger's sanitary sewer system collects wastewater using sewers, pipes, pumps, and/or other conveyance systems and directs the raw sewage to the wastewater treatment plant. A "sanitary sewer overflow" is defined as a discharge to ground or surface water from the sanitary sewer system at any point upstream of the wastewater treatment plant. Sanitary sewer overflows are prohibited by this Order. All violations must be reported as required in Standard Provisions. Facilities (such as wet wells, regulated impoundments, tanks, highlines, *etc.*) may be part of a sanitary sewer system and discharges to these facilities are not considered sanitary sewer overflows, provided that the waste is fully contained within these temporary storage facilities.

4. **Annual Operations Report.** By **30 January** of each year, the Discharger shall submit a written report to the Executive Officer containing the following:

   a. The names, certificate grades, and general responsibilities of all persons employed at the Facility.

   b. The names and telephone numbers of persons to contact regarding the plant for emergency and routine situations.

   c. A statement certifying when the flow meter(s) and other monitoring instruments and devices were last calibrated, including identification of who performed the calibration.

   d. A statement certifying whether the current operation and maintenance manual, and contingency plan, reflect the wastewater treatment plant as currently constructed and operated, and the dates when these documents were last revised and last reviewed for adequacy.

   e. The Discharger may also be requested to submit an annual report to the Regional Water Board with both tabular and graphical summaries of the monitoring data obtained during the previous year. Any such request shall be made in writing. The report shall discuss the compliance record. If violations have occurred, the report shall also discuss the corrective actions taken and planned to bring the discharge into full compliance with the waste discharge requirements.

5. **Annual Pretreatment Reporting Requirements.** The Discharger shall submit annually a report to the Regional Water Board, with copies to USEPA Region 9 and the State Water Board, describing the Discharger's pretreatment activities over the previous 12 months. In the event that the Discharger is not in compliance with any conditions or requirements of this Order, including noncompliance with pretreatment audit/compliance inspection requirements, then the Discharger shall also include the reasons for noncompliance and state how and when the Discharger shall comply with such conditions and requirements.

   An annual report shall be submitted by **28 February** and include at least the following items:

a. A summary of analytical results from representative, flow proportioned, 24-hour composite sampling of the POTW's influent and effluent for those pollutants USEPA has identified under Section 307(a) of the CWA which are known or suspected to be discharged by industrial users.

   Sludge shall be sampled during the same 24-hour period and analyzed for the same pollutants as the influent and effluent sampling and analysis. The sludge analyzed shall be a composite sample of a minimum of 12 discrete samples taken at equal time intervals over the 24-hour period. Wastewater and sludge sampling and analysis shall be performed at least annually. The discharger shall also provide any influent, effluent or sludge monitoring data for nonpriority pollutants which may be causing or contributing to Interference, Pass-Through or adversely impacting sludge quality. Sampling and analysis shall be performed in accordance with the techniques prescribed in 40 CFR 136 and amendments thereto.

b. A discussion of Upset, Interference, or Pass-Through incidents, if any, at the treatment plant, which the Discharger knows or suspects were caused by industrial users of the POTW. The discussion shall include the reasons why the incidents occurred, the corrective actions taken and, if known, the name and address of, the industrial user(s) responsible. The discussion shall also include a review of the applicable pollutant limitations to determine whether any additional limitations, or changes to existing requirements, may be necessary to prevent Pass-Through, Interference, or noncompliance with sludge disposal requirements.

c. The cumulative number of industrial users that the Discharger has notified regarding Baseline Monitoring Reports and the cumulative number of industrial user responses.

d. An updated list of the Discharger's industrial users including their names and addresses, or a list of deletions and additions keyed to a previously submitted list. The Discharger shall provide a brief explanation for each deletion. The list shall identify the industrial users subject to federal categorical standards by specifying which set(s) of standards are applicable. The list shall indicate which categorical industries, or specific pollutants from each industry, are subject to local limitations that are more stringent than the federal categorical standards. The Discharger shall also list the noncategorical industrial users that are subject only to local discharge limitations. The Discharger shall characterize the compliance status through the year of record of each industrial user by employing the following descriptions:

   i. complied with baseline monitoring report requirements (where applicable);
   ii. consistently achieved compliance;
   iii. inconsistently achieved compliance;
   iv. significantly violated applicable pretreatment requirements as defined by 40 CFR 403.8(f)(2)(vii);

v. complied with schedule to achieve compliance (include the date final compliance is required);
vi. did not achieve compliance and not on a compliance schedule; and
vii. compliance status unknown.

A report describing the compliance status of each industrial user characterized by the descriptions in items iii. through vii. above shall be submitted for each calendar quarter **within 21 days of the end of the quarter**. The report shall identify the specific compliance status of each such industrial user and shall also identify the compliance status of the POTW with regards to audit/pretreatment compliance inspection requirements. If none of the aforementioned conditions exist, at a minimum, a letter indicating that all industries are in compliance and no violations or changes to the pretreatment program have occurred during the quarter must be submitted. The information required in the fourth quarter report shall be included as part of the annual report. This quarterly reporting requirement shall commence upon issuance of this Order.

e. A summary of the inspection and sampling activities conducted by the Discharger during the past year to gather information and data regarding the industrial users. The summary shall include:

   i. the names and addresses of the industrial users subjected to surveillance and an explanation of whether they were inspected, sampled, or both and the frequency of these activities at each user; and
   ii. the conclusions or results from the inspection or sampling of each industrial user.

f. A summary of the compliance and enforcement activities during the past year. The summary shall include the names and addresses of the industrial users affected by the following actions:

   i. Warning letters or notices of violation regarding the industrial users' apparent noncompliance with federal categorical standards or local discharge limitations. For each industrial user, identify whether the apparent violation concerned the federal categorical standards or local discharge limitations.
   ii. Administrative orders regarding the industrial users noncompliance with federal categorical standards or local discharge limitations. For each industrial user, identify whether the violation concerned the federal categorical standards or local discharge limitations.
   iii. Civil actions regarding the industrial users' noncompliance with federal categorical standards or local discharge limitations. For each industrial user, identify whether the violation concerned the federal categorical standards or local discharge limitations.
   iv. Criminal actions regarding the industrial users noncompliance with federal categorical standards or local discharge limitations. For each industrial user, identify whether the violation concerned the federal categorical standards or local discharge limitations.

v. Assessment of monetary penalties. For each industrial user identify the amount of the penalties.
vi. Restriction of flow to the POTW.
vii. Disconnection from discharge to the POTW.

g. A description of any significant changes in operating the pretreatment program which differ from the information in the Discharger's approved Pretreatment Program including, but not limited to, changes concerning: the program's administrative structure, local industrial discharge limitations, monitoring program or monitoring frequencies, legal authority or enforcement policy, funding mechanisms, resource requirements, or staffing levels.

h. A summary of the annual pretreatment budget, including the cost of pretreatment program functions and equipment purchases.

Duplicate signed copies of these Pretreatment Program reports shall be submitted to the Regional Water Board and the:

State Water Resources Control Board
Division of Water Quality
P.O. Box 944213
Sacramento, CA 94244-2130

and the

Regional Administrator
U.S. Environmental Protection Agency W-5
75 Hawthorne Street
San Francisco, CA 94105

ATTACHMENT F – FACT SHEET

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ATTACHMENT F – FACT SHEET

As described in section II of this Order, this Fact Sheet includes the legal requirements and technical rationale that serve as the basis for the requirements of this Order.

This Order has been prepared under a standardized format to accommodate a broad range of discharge requirements for dischargers in California. Only those sections or subsections of this Order that are specifically identified as "not applicable" have been determined not to apply to this Discharger. Sections or subsections of this Order not specifically identified as "not applicable" are fully applicable to this Discharger.

I. PERMIT INFORMATION

The following table summarizes administrative information related to the facility.

Table F-1. Facility Information

WDID	5B390107001
Discharger	City of Stockton
Name of Facility	Regional Wastewater Control Facility
Facility Address	2500 Navy Drive
	Stockton, CA 95206
	San Joaquin County
Facility Contact, Title and Phone	Mark Madison, Director, (209) 937-8750
Authorized Person to Sign and Submit Reports	Mark Madison, Director, (209) 937-8750
Mailing Address	SAME
Billing Address	SAME
Type of Facility	Publicly Owned Treatment Works
Major or Minor Facility	Major
Threat to Water Quality	1
Complexity	A
Pretreatment Program	Yes
Reclamation Requirements	No
Facility Permitted Flow	55 million gallons per day (mgd)
Facility Design Flow	55 mgd
Watershed	Sacramento-San Joaquin Delta
Receiving Water	San Joaquin River
Receiving Water Type	Sacramento-San Joaquin Delta

A. The City of Stockton (hereinafter Discharger) is the owner and operator of the City of Stockton Regional Wastewater Control Facility (hereinafter Facility), a publicly owned treatment works (POTW).

For the purposes of this Order, references to the "discharger" or "permittee" in applicable federal and state laws, regulations, plans, or policy are held to be equivalent to references to the Discharger herein.

B. The Facility discharges wastewater to the San Joaquin River, a water of the United States, and is currently regulated by Order No. R5-2002-0083, which was adopted on 26 April 2002 and expired on 1 April 2007. Further, Cease and Desist Order No. R5-2002-0084 (CDO) was adopted by the Regional Water Board on 26 April 2002, and establishes a time schedule for the Discharger to comply with ammonia effluent limitations established in Order No. R5-2002-0083. The Orders were petitioned by the Discharger on 28 May 2002 and on 17 October 2002. The State Water Board granted Stay Order WQO 2002-0018 for portions of Order No. R5-2002-0083 and the CDO. On 2 May 2003, the Discharger filed a Motion for Preliminary Injunction/Order Requiring Stay until 5 September 2003, which the Superior Court upheld on 26 June 2003. The terms and conditions of the current Order have been automatically continued and remain in effect until new Waste Discharge Requirements and NPDES permit are adopted pursuant to this Order. However, as a result of the State Water Board Order and the Court Order, the compliance date for the final ammonia effluent limitations were extended to 10 August 2008, and the compliance date for meeting the tertiary treatment requirements was extended to 25 September 2007.

C. The Discharger filed a report of waste discharge and submitted an application for renewal of its Waste Discharge Requirements (WDRs) and National Pollutant Discharge Elimination System (NPDES) permit on 29 September 2006. Supplemental information was requested on 26 February 2007, and received on 28 February 2007. A site visit was conducted on 21 April 2006 to observe operations and collect additional data to develop permit limitations and conditions.

II. FACILITY DESCRIPTION

The Discharger provides sewerage service for the City of Stockton, the Port of Stockton, and surrounding urbanized San Joaquin County areas. The Facility serves a population of approximately 326,000, and discharges intermittently up to 55 mgd tertiary-level treated effluent to the San Joaquin River, within the Sacramento-San Joaquin Delta. The Facility average daily flow rate is approximately 31.7 mgd, and the maximum annual average effluent discharge was 36.37 mgd.

A. Description of Wastewater and Biosolids Treatment or Controls

The Facility is bifurcated by the San Joaquin River; the main facility (primary and secondary treatment facilities, and sludge processing facilities) is located east of the river and the tertiary treatment facility is located west of the river. At the main facility, the primary treatment processes consist of screening, grit removal, and primary sedimentation. The secondary treatment processes consist of high rate trickling filters and secondary clarifiers. Sludge is removed from the primary and secondary sedimentation processes to gravity thickeners for preliminary water removal, and then pumped to anaerobic digesters. After digestion, the treated sludge is pumped to a sludge lagoon where anaerobic digestion continues. A dredge is used to pump the

concentrated material from the bottom of the lagoon to a belt filter press, and dewatered biosolids are removed by a private contractor off-site for agricultural reuse.

From the main facility, the secondary-treated effluent is piped under the San Joaquin River to the tertiary treatment facility, which consists of unlined facultative oxidation ponds, engineered wetlands, two nitrifying biotowers, dissolved air flotation, mixed-media filters, and chlorination/dechlorination facilities. Several of the facultative ponds are operated in a stand-by mode of operation as necessary, to achieve improved effluent quality by decreasing solids loading on the downstream treatment process, and by maintaining stable ammonia loading to the nitrifying biotowers.

B. Discharge Points and Receiving Waters

1. The Facility is located in T1N, R6E, MDB&M, as shown in Attachment B, a part of this Order.

2. Tertiary-level treated municipal wastewater is discharged at Discharge Point No. 001 to the San Joaquin River, a water of the United States at latitude 37° 56' 15" N and longitude 121° 20' 05" W.

C. Summary of Existing Requirements and Self-Monitoring Report (SMR) Data

Effluent limitations/discharge specifications contained in the existing Order for discharges from Discharge Point No. 001 and representative monitoring data from the term of the previous Order are as follows:

Table F-2. Historic Effluent Limitations and Monitoring Data

Parameter	Units	Effluent Limitation			Monitoring Data (From 1 May 2002 – 31 January 2007)		
		Average Monthly	Average Weekly	Maximum Daily	Highest Average Monthly Discharge	Highest Average Weekly Discharge	Highest Daily Discharge
Total Coliform[1]	MPN/100 mL	--	2.2[2]	23	--	50[2]	130
Total Coliform[3]	MPN/100 mL	23[4]	--	240	4[4]	--	1600
Turbidity[1,6]	NTU	--	2	10	--	35	58
Total Suspended Solids	mg/L	30	45	60	21	30	48
	lbs/day[6]	45,300	67,900	90,600	5,016	7,134	9,782
Settleable Matter	mL/L/hr	0.1	--	0.5	0.055	--	0.2
Oil and Grease	mg/L	10	--	15	9.5	--	14
	lbs/day[6]	4,600	--	6,900	2278	--	3234
Ammonia-N	mg/L	2	--	5	28	--	29
	lbs/day[6]	917	--	2,294	8,915	--	12,002
Copper[1]	µg/L	5.2	--	10.4	2.9	--	2.9
	lbs/day[6]	2.4	--	4.8	0.74	--	0.74
Copper[3]	µg/L	--	--	35	--	--	6
	lbs/day	--	--	16	--	--	2.19
Cyanide[1]	µg/L	4	--	9.2	8	--	13

Parameter	Units	Effluent Limitation			Monitoring Data (From 1 May 2002 – 31 January 2007)		
		Average Monthly	Average Weekly	Maximum Daily	Highest Average Monthly Discharge	Highest Average Weekly Discharge	Highest Daily Discharge
	lbs/day[6]	1.8	--	4.2	1.51	--	1.51
Cyanide[3]	µg/L	--	--	24	8	--	8
	lbs/day[6]	--	--	11	2.26	--	2.26
Chloroform	µg/L	52	--	129	21	--	21
	lbs/day[6]	24	--	59	5.09	--	5.09
Dichloromethane	µg/L	11	--	25	J 0.48	--	J 0.48
	lbs/day[6]	5	--	11.5	0.136	--	0.136
Trichloroethylene	µg/L	14.5	--	34	ND	--	ND
	lbs/day[6]	6.7	--	15.6	ND	--	ND
Bromodichloromethane	µg/L	--	--	82	--	--	36
	lbs/day[6]	--	--	37.6	--	--	16.5
Dibromochloromethane	µg/L	--	--	23	--	--	29
	lbs/day[6]	--	--	10.6	--	--	5.59
1,1-Dichloroethylene	µg/L	--	--	14.5	--	--	ND
	lbs/day[6]	--	--	6.7	--	--	ND
Tetrachloroethylene	µg/L	--	--	14.5	--	--	J 0.09
	lbs/day[6]	--	--	6.7	--	--	0.023
Bis (2-ethylhexyl) phthalate	µg/L	--	--	48	--	--	5.5
	lbs/day[6]	--	--	22	--	--	1.7
Diazinon	µg/L	--	--	0.1	--	--	J 0.155
	lbs/day[6]	--	--	0.046	--	--	0.039
DDT[1]	lbs/year	--	--	ND[7]	--	--	ND
DDT[3]	lbs/year	--	--	7.5[8]	--	--	ND
Endrin Aldehyde[1]	lbs/year	--	--	ND[7]	--	--	ND
Endrin Aldehyde[3]	lbs/year	--	--	12.9[8]	--	--	ND
Lindane[1]	lbs/year	--	--	ND[7]	--	--	ND
Lindane[3]	lbs/year	--	--	3.2[8]	--	--	ND
Mercury	lbs/year	--	--	0.92[8]	--	--	0.537
CBOD[9,10]	mg/L	10	20	25	9.78	17.17	25
	lbs/day[6]	4,590	9,170	11,500	2,655	4,753	8,173
CBOD[9,11]	mg/L	15	23	30	8.85	12.71	16
	lbs/day[6]	6,880	10,600	13,800	1,934	2,839	4,443
CBOD[9,12]	mg/L	20	30	50	18.07	22.4	30
	lbs/day[6]	9,170	13,800	22,900	5,335	7,213	9,621
Chlorine Residual	mg/L	--	0.01[13]	0.02[14]	--	0	0
	lbs/day[6]	--	4.6[13]	--	--	0	--
Dissolved Oxygen	mg/L	--	--	[15]	--	--	1.8[16]
pH	standard units	--	--	[17]	--	--	5.5 – 8.5[18]
CBOD Removal	%	85[19]	--	--	93.6[20]	--	--
TSS Removal	%	85[19]	--	--	92.3[20]	--	--
Flow	mgd	--	--	[21]	--	--	55
Acute Toxicity	% Survival	--	--	[22]	--	--	70[23]

Parameter	Units	Effluent Limitation			Monitoring Data (From 1 May 2002 – 31 January 2007)		
		Average Monthly	Average Weekly	Maximum Daily	Highest Average Monthly Discharge	Highest Average Weekly Discharge	Highest Daily Discharge
Temperature	°F	--	--	[24]	--	--	15.2[25]

ND – Not Detected
1 Final limit became effective 1 May 2006.
2 Applied as a 7-day median.
3 Interim limit effective until 1 May 2006.
4 Applied as a monthly median.
5 Turbidity shall not exceed 5 NTU 5% of the time or 10 NTU at any given time monitored continuously.
6 Based upon a permitted flow of 55 mgd.
7 Non-detectable (ND). The Discharger shall use EPA standard analytical techniques that have the lowest practical levels for DDT, endrin aldehyde, and lindane with minimum acceptable reporting levels of 0.01 µg/L, 0.01 µg/L, and 0.02 µg/L, respectively. Detectable concentrations of these pollutants less than cited lowest practical levels shall be considered in compliance with this effluent limitation.
8 Yearly total as calculated per Effluent Limitation B.11 of Order No. R5-2002-083.
9 5-day, 20°C, carbonaceous biochemical oxygen demand, ascertained by 24-hour composite.
10 Effective 1 April through 31 October, and became effective 25 September 2007.
11 Effective 1 November through 30 November.
12 Effective 1 December through 31 March.
13 Applied as a 4-day average effluent limitation.
14 Applied as a 1-hour average effluent limitation.
15 Effective 1 January 2003, the Discharger shall maintain minimum daily average effluent DO concentration of 6.0 mg/L from 1 September through 30 November and 5.0 mg/L throughout the remainder of the year.
16 Minimum daily discharge of the monitoring data.
17 Effective 1 April 2007, the discharge shall not have a pH less than 6.5 nor greater than 8.5. Prior to 1 April 2007, the discharge shall not have a pH less than 6.0 nor greater than 8.5. Individual excursions below or above the prescribed minimum and maximum pH limitations shall not exceed 60 minutes, respectively. The total duration of excursions shall not exceed 1% of the discharge time within the reporting period. The Discharger shall conduct an internal review and report the reasons for any individual excursion exceeding 30 minutes in duration to the Regional Water Board within the self-monitoring report.
18 Range of pH values of the monitoring data.
19 The arithmetic mean of 20°C CBOD (5-day) and total suspended solids in effluent samples collected over a monthly period shall not exceed 15 percent of the arithmetic mean of the values for influent samples collected at approximately the same times during the same period (85 percent removal).
20 Minimum monthly percent removal of the monitoring data.
21 The average dry weather discharge flow shall not exceed 55 mgd. The peak wet weather discharge flow shall not exceed 67 mgd.
22 Survival of aquatic organisms in 96-hour bioassays of undiluted waste shall not be less than 70% for any one bioassay and 90% median for any three or more consecutive bioassays.
23 Minimum percent survival of the monitoring data.
24 The maximum effluent temperature shall not exceed the natural receiving water temperature by more than 20°F.
25 Maximum difference between the effluent temperature and the natural receiving water temperature.

D. Compliance Summary

Record of Violations (1 January 2000 – 30 April 2008)									
Year:	2000	2001	2002	2003	2004	2005	2006	2007	2008
Coliform	2	0	1	0	0	2	1	0	0
$CBOD_5$	0	0	0	0	0	0	1	0	0
Dibromochloromethane	0	0	0	0	0	0	1	6	0

E. Planned Changes

[Not Applicable]

III. APPLICABLE PLANS, POLICIES, AND REGULATIONS

The requirements contained in this Order are based on the applicable plans, policies, and regulations identified in section II of the Limitations and Discharge Requirements (Findings). This section provides supplemental information, where appropriate, for the plans, policies, and regulations relevant to the discharge.

A. Legal Authority

See Limitations and Discharge Requirements - Findings, Section II.C.

B. California Environmental Quality Act (CEQA)

See Limitations and Discharge Requirements - Findings, Section II.E.

C. State and Federal Regulations, Policies, and Plans

1. **Water Quality Control Plans**. The Regional Water Board adopted a *Water Quality Control Plan, Fourth Edition (Revised February 2007), for the Sacramento and San Joaquin River Basins* (Basin Plan) that designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters addressed through the plan. In addition, State Water Board Resolution No. 88-63 requires that, with certain exceptions, the Regional Water Board assign the municipal and domestic supply use to water bodies that do not have beneficial uses listed in the Basin Plan. The beneficial uses of the San Joaquin River downstream of the discharge are municipal and domestic supply; agricultural supply; industrial process supply; industrial service supply; water contact recreation; non-contact water recreation; migration of aquatic organisms; both cold and warm freshwater aquatic habitat; spawning, reproduction, and/or early development; wildlife habitat; and navigation.

   The Basin Plan on page II-1.00 states: "*Protection and enhancement of existing and potential beneficial uses are primary goals of water quality planning...*" and with respect to disposal of wastewaters states that "*...disposal of wastewaters is [not] a prohibited use of waters of the State; it is merely a use which cannot be satisfied to the detriment of beneficial uses.*"

   The federal CWA section 101(a)(2), states: "*it is the national goal that wherever attainable, an interim goal of water quality which provides for the protection and propagation of fish, shellfish, and wildlife, and for recreation in and on the water be achieved by July 1, 1983.*" Federal regulations, developed to implement the requirements of the CWA, create a rebuttable presumption that all waters be designated as fishable and swimmable. Federal regulations, 40 CFR sections 131.2

and 131.10, require that all waters of the state regulated to protect the beneficial uses of public water supply, protection and propagation of fish, shell fish and wildlife, recreation in and on the water, agricultural, industrial and other purposes including navigation. Section 131.3(e), 40 CFR, defines existing beneficial uses as those uses actually attained after 28 November 1975, whether or not they are included in the water quality standards. Federal regulation, 40 CFR section 131.10 requires that uses be obtained by implementing effluent limitations, requires that all downstream uses be protected, and states that in no case shall a state adopt waste transport or waste assimilation as a beneficial use for any waters of the United States.

This Order contains effluent limitations requiring a tertiary level of treatment, or equivalent, which is necessary to protect the beneficial uses of the receiving water. The Regional Water Board has considered the factors listed in CWC section 13241 in establishing these requirements, as discussed in more detail in the Fact Sheet, Attachment F, Section IV.

2. **Thermal Plan.** The State Water Board adopted a *Water Quality Control Plan for Control of Temperature in the Coastal and Interstate Water and Enclosed Bays and Estuaries of California* (Thermal Plan) on 18 May 1972, and amended this plan on 18 September 1975. This plan contains temperature objectives for surface waters, including estuaries. The Thermal Plan specifically includes the Sacramento-San Joaquin Delta within the definition of an estuary. The Discharger discharges tertiary-level treated wastewater effluent to San Joaquin River, within the legal boundary of the Delta as defined by Section 12220 CWC. The Discharger is considered to be an "Existing Discharger of Elevated Temperature Waste" as described in the Thermal Plan. Thus the Thermal Plan requirements for discharges to estuaries are applicable to this discharge. Requirements of this Order implement the Thermal Plan, and are described as follows:

   a. The maximum temperature shall not exceed the natural receiving water temperature by more than 20°F.

   b. Elevated temperature waste discharge either individually or combined with other discharges shall not create a zone, defined by water temperatures of more than 1°F above natural receiving water temperature, which exceeds 25 percent of the cross-sectional area of a main river channel at any point.

   c. No discharge shall cause a surface water temperature rise greater than 4°F above the natural temperature of the receiving waters at any time or place.

   d. Additional limitations shall be imposed when necessary to assure protection of beneficial uses.

   The Discharger has conducted two site-specific temperature studies, a far-field study (November 1995) and a near-field study (May 2006), to assess any possible thermal impacts of the discharge into the San Joaquin River on migrating fish, including possible stress effects on reproduction or early-life fish development. Based on the results of both these studies, this Order does not impose additional temperature

limitations; however, this Order does implement the requirements of the Thermal Plan (see sections IV.C.3.aa and V.A.1.o of this Fact Sheet for further discussion).

3. **Bay-Delta Plan.** The *Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary* (Bay-Delta Plan) was adopted in May 1995 by the State Water Board superseding the 1991 Bay-Delta Plan. The Bay-Delta Plan identifies the beneficial uses of the estuary and includes objectives for flow, salinity, and endangered species protection.

   The Bay-Delta Plan attempts to create a management plan that is acceptable to the stakeholders while at the same time is protective of beneficial uses of the San Joaquin River. The State Water Board adopted Decision 1641 (D-1641) on 29 December 1999. D-1641 implements flow objectives for the Bay-Delta Estuary, approves a petition to change points of diversion of the Central Valley Project and the State Water Project in the Southern Delta, and approves a petition to change places of use and purposes of use of the Central Valley Project. The water quality objectives of the Bay-Delta Plan are implemented as part of this Order.

4. **Antidegradation Policy.** See Limitations and Discharge Requirements – Findings, Section II.N; and Section IV.D.4 of this Fact Sheet.

5. **Anti-Backsliding Requirements.** See Limitations and Discharge Requirements – Findings, Section II.O; and Section IV.D.3 of this Fact Sheet.

6. ***Emergency Planning and Community Right to Know Act.*** CWC section 13263.6(a) requires that "*the Regional Water Board shall prescribe effluent limitations as part of the waste discharge requirements of a POTW for all substances that the most recent toxic chemical release data reported to the state emergency response commission pursuant to Section 313 of the Emergency Planning and Community Right to Know Act of 1986 (42 U.S.C. Sec. 11023) (EPCRA) indicate as discharged into the POTW, for which the State Water Board or the Regional Water Board has established numeric water quality objectives, and has determined that the discharge is or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to, an excursion above any numeric water quality objective.*"

   The EPCRA Section 313 toxic chemical release data report indicates that acetaldehyde, ammonia, chlorine, chromium compounds, lead, mercury, MTBE, and zinc compounds discharge into the Discharger's collection system. The Regional Water Board has adopted numeric receiving water objectives for acetaldehyde, ammonia, chlorine, chromium compounds, lead, mercury, MTBE, and zinc compounds in the Water Quality Control Plan for the Central Valley Basin (Basin Plan). A reasonable potential analysis was conducted as specified in Section 1.3 of the SIP with the available data. As detailed in Section IV of this Fact Sheet, available effluent quality data indicate that effluent concentrations of ammonia, and chlorine do have a reasonable potential to cause or contribute to an excursion above numeric water quality objectives within the Basin Plan. Effluent limitations for ammonia, and chlorine are included in this permit pursuant to CWC Section